(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau





(43) International Publication Date 4 August 2005 (04.08.2005)

PCT

(10) International Publication Number WO 2005/071478 A1

(51) International Patent Classification⁷: G02F 1/1368, 1/1343, G09F 9/00, H01L 21/28, 21/3205, 21/336, 29/417, 29/423, 29/49, 29/786, H05B 33/14

(21) International Application Number:

PCT/JP2005/001286

(22) International Filing Date: 24 January 2005 (24.01.2005)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

2004-017583

26 January 2004 (26.01.2004) JI

2004-017608

26 January 2004 (26.01.2004) JF

(71) Applicant (for all designated States except US): SEMI-CONDUCTOR ENERGY LABORATORY CO., LTD. [JP/JP]; 398, Hase, Atsugi-shi, Kanagawa 2430036 (JP).

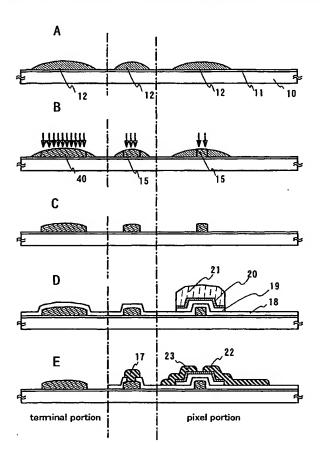
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): MAEKAWA, Shinji

[JP/JP]; c/o Semiconductor Energy Laboratory Co., Ltd., 398, Hase, Atsugi-shi, Kanagawa 2430036 (JP). YA-MAZAKI, Shunpel [JP/JP]; c/o Semiconductor Energy Laboratory Co., Ltd., 398, Hase, Atsugi-shi, Kanagawa 2430036 (JP). SHOJI, Hironobu [JP/JP]; c/o Semiconductor Energy Laboratory Co., Ltd., 398, Hase, Atsugi-shi, Kanagawa 2430036 (JP).

- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH,

[Continued on next page]

(54) Title: ELECTRIC APPLIANCE, SEMICONDUCTOR DEVICE, AND METHOD FOR MANUFACTURING THE SAME



(57) Abstract: In the present circumstances, a film formation method of using spin coating in a manufacturing process is heavily used. As increasing the substrate size in future, the film formation method of using spin coating becomes at a disadvantage in mass production since a mechanism for rotating a large substrate becomes large, and there is many loss of material solution or waste liquid. According to the present invention, in a manufacturing process of a semiconductor device, a microscopic wiring pattern can be realized by delivering selectively photosensitive conductive material solution by droplet discharging, exposing selectively to laser light or the like, and developing. The present invention can reduce drastically costs since a patterning process can be shortened and an amount of material in a process of forming a conductive pattern can be reduced. Accordingly, the present invention can be applied to manufacture a large substrate.

WO 2005/071478 A1



GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.